

The Sustainability of the UBC Food System Collaborative Project III 2004: Scenario 8

What are the perceptions of UBC customers regarding the price of food at UBC?

Elisa Armstrong, Choy Yi Man, Laila Hussein, Kathryn Leah, Loretta Massara, Meghan

Sempowich

University of British Columbia

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Scenario 8

What are the perceptions of UBC customers regarding the price of food at UBC?



“Change for the sake of change is a meaningless exercise that accomplishes little and often leads to disaster”

~ Pearson

Group 4:

**Elisa Armstrong
Yi Man, Choy
Laila Hussein
Kathryn Leah
Loretta Massara
Meghan Sempowich**

Agricultural Sciences 450

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Lei Wang

ABSTRACT

2004 is the third year of the University of British Columbia's (UBC) Food System Collaborative Project on Sustainability (UBCFSP). Our team, group four, has been assigned the task of researching *Scenario 8: What are the perceptions of UBC customers regarding the price of food at UBC?* Before initiating this task, we will first clarify our problem definition, define the concept of sustainability, and articulate our vision of a sustainable UBC food system based on our assessment of group three's model of sustainability from the 2003 UBCFSP.

Based on our value assumptions that combine both eco-centrism and weak-anthropocentrism, our group further defines sustainable food products in terms of six aspects of food production: production, packaging, advertising, transportation, distribution, and disposal. Furthermore, by incorporating a community-based approach, a research agenda is developed to identify the perceptions of UBC customers regarding the price of food at UBC and practices to establish full costs and benefits. The research instruments include qualitative methods, such as surveys, open-ended questionnaires and cost-benefit analysis, and quantitative methods, such as statistical measurements of food mileage and accessibility of food and methods of payment. A timeline is also provided to help guide future research in 2005 and 2006. Finally, in order to help validate our research, we identify those stakeholders who stand to benefit from our research into assessing the perceptions of UBC consumers with regards to food pricing at UBC.

THE UBC FOOD SYSTEM PROJECT

The students of the Land, Food and Community III class have been involved in a collaborative research project for the last three years, in an effort to evaluate the UBC food system in terms of ecological, social and economic sustainability. Each year has taken the

information gathered in the previous year's research to create new ideas and initiatives for a more sustainable UBC food system.

In the first year of this project, 2002, the students of the Agricultural Sciences 450 (AGSC 450) class were assigned the task of conceptualizing and connecting the different interrelated aspects of the UBC food system. During the second year, 2003, students were assigned the task of developing a model for evaluating the UBC food system in terms of its overall sustainability. They developed specific indicators to help determine the sustainability of the food system in terms of social, economic, and ecological factors. As well, groups developed a vision of what a sustainable UBC food system consists of and made recommendations as to how we can better achieve this vision.

Currently, the UBCFSP is in its third year of research and development. Using the models of sustainability from the class of 2003, we have been assigned the task of critiquing and modifying the sustainability models from last year as well as developing a plan for research into the possibility and acceptability of moving the UBC food system towards overall sustainability.

GROUP THREE'S MODEL FOR SUSTAINABILITY

Choosing a single best model to evaluate the sustainability of the UBC food system was a difficult task as many of the models contained aspects that we felt were important. After carefully evaluating each of the four best UBCFSP papers and websites from 2003, our group chose group three's model.

Although group three's problem definition is not stated clearly in their paper, we feel that this statement, adapted from their paper, best defines the problem at hand, "In light of our awareness of globalization, increased population, and its later connection with the food system,

we need to take a deeper look at the issues surrounding sustainability and explore some possible indicators of sustainability within our food system at UBC.”

The indicators that group three uses to evaluate sustainability are divided into social, economic and ecological factors. Within each of these categories, there are two specific indicators that can be measured to help locate the UBC food system on the “Sustainable- Unsustainable” continuum.

Ecological Indicators

The indicators that group three uses to assess the ecological sustainability of the UBC food system are as follows:

- 1) The UBC composting system which is measured quantitatively by the number of composting bins on campus available at residential and food service locations and consumer awareness of them, and
- 2) The source of food consumed at UBC, which is measured by the number of medium and large sized trucks coming onto campus.

Although these two specific indicators are important for measuring ecological sustainability, the ways in which group three proposes to measure them are not feasible.

With regards to the UBC composting system, we feel that counting the number of bins on campus and measuring the awareness of these bins will not accurately measure ecological sustainability simply because there are numerous composting bins on campus, it does not mean that people are necessarily using them. A better way of measuring this indicator would be to quantitatively measure the amount of compost that is being collected in these bins by way of a volume marker on the bins or by the weight of the compost collected in the bins. As well, the percentage of the waste produced at UBC that is composted instead of deposited in a landfill can also be a way of quantitatively measuring the ecological sustainability of the UBC food system.

Although using the source of food consumed at UBC is a good indicator of ecological sustainability, the method by which group three proposes to measure it is not feasible. By counting the number of medium and large sized trucks coming onto campus, we would not be able to determine where the food was coming from or even if the trucks were carrying food. A better measurement of ecological sustainability of the source of food consumed on campus is food miles, the distance in miles that a food product has traveled to reach UBC. This can be measured by simply examining the food purchasing records at food service outlets on campus.

Economic Indicators

The economic indicators that group three uses to measure the sustainability of the UBC food system are determined by the flow of money.

Group three feels that at the core of economic sustainability is “profitability and the ability of a system to maintain a decent standard of living for all participants.” Additionally, “the system must not contribute to radical polarization of wealth since dramatic concentration of wealth in two hands cannot sustain a desirable standard of living”. With this weakly anthropocentric ideal in mind, group three developed the following two indicators for measuring economic sustainability:

- 1) The profitability of the UBC food system, measured by revenue and the accessibility of food service providers in terms of location, methods of payment available and hours of operation, and
- 2) **Equity** of the UBC food system, measured by the number of employees working at food service outlets that are students and/or residences of the UBC community and the affordability of food at UBC food outlets

The criteria outlined for the first indicator is an excellent way of measuring economic sustainability. Not only does revenue measure profitability, **but accessibility** in terms of location and choices of method of payment will also **contribute** to the profitability of a food outlet. These are both excellent indicators of sustainability because they are easy to determine within the UBC food system. Revenue can be determined by examining the food service outlet yearly revenue reports. As well, it might be worthwhile to measure quantitatively, consumer awareness of food service outlets as a part of economic sustainability.

The criteria outlined for the equitability indicator are clear and concise. Measuring the students’ willingness to pay as well their ability to pay are appropriate ways to determine the affordability of foods in the UBC food system. Additionally, measuring the number of students working in UBC food outlets is also another feasible way of measuring equitability and economic sustainability.

Social Indicators

According to group three, “the goals of a sustainable food system should ultimately benefit humans” and, “a socially sustainable food system is one that

preserves and enhances the health and well-being of the individuals.” The indicators used to measure the social sustainability in group three’s model include:

- 1) The accessibility of food, measured by hours of operation and the variety of foods available that are nutritious, safe and culturally acceptable, and
- 2) Community involvement with the UBC food system, measured by the involvement of the UBC Farm in providing food as well as the amount of student involvement and initiative

The criteria for a socially sustainable food system include having both Alma Mater Society (AMS) and UBC Food Service outlets located throughout campus with hours of operation that reflect consumer needs, as well as food outlets that offer expanding ethnic varieties and high quality, nutritious foods.

The criteria for measuring student involvement with the UBC food system are excellent indicators of social sustainability. Group three suggests measuring the amount of ingredients the farm supplies to food services and communal dinners whenever possible. They do not, however, suggest that in order for the UBC food system to be considered sustainable that all foods supplied to food services on campus should come from the UBC farm as this is unrealistic. The indicators for social sustainability are set at realistic levels and the criteria are attainable as there are no set maximums for the farm to provide food for the UBC food system

These criteria can be realistically measured to help determine if the UBC food system is socially sustainable or not in terms of the criteria outlined above by group three. As awareness is the key to achieving a sustainable food system, we feel that education and awareness of the community about the UBC food system is also an important indicator. It can be measured qualitatively through surveys and open ended questionnaires and the information they provide can then be used to further developed programs to educate the community. This requires

collaboration between all faculties at UBC as well as food service providers, the UBC Farm, and sustainability initiative groups such as the UBC Sustainability Office.

The reason we chose group three's model for evaluating the UBC food system was due to their understanding that in order for a system to be sustainable, it does not have to be at 100% working capacity. For example, group three set their social indicators at 75% for sustainable when it comes to student involvement **and contribution of UBC Farm in the UBC food system**. Additionally, their values for ecological indicators were also set at values lower than 100% making the indicators more realistic and achievable.

In addition to choosing some realistic indicators of sustainability, group three also chose more than one way to measure each of these indicators. For example, economic sustainability can be measured by two different indicators: profitability and equitability. These two indicators can then be measured quantitatively by several different factors. It is important to note that the sustainability of a system involves extremely complex interactions between a number of different components and stakeholders within the system. Group three recognizes this and attempts to find numerous ways to measure their indicators of sustainability.

Although group three's indicators and criteria for measuring these are numerous and concise, we feel that they are not adequate enough to accurately locate the UBC food system on the "Sustainable-Unsustainable" continuum. Although some of the indicators can be used to accurately measure the sustainability of the food system in terms of individual economic, social, and ecological factors, not all are quantitatively measurable which we feel is an important factor in determining the overall sustainability of the UBC food system. Later in this paper, we will outline our adapted model for sustainability with indicators that we feel are adequately representative of the overall sustainability of the UBC food system.

THE TASK AT HAND

In terms of the UBC food system, we will be looking at current food pricing at UBC and its implications for developing initiatives to adopt more sustainable food purchasing policies. Consumer perception is an integral part of this research and will be central in studying the components of our research agenda.

VALUE ASSUMPTION

Paradigms are the lenses through which we organize the gathering of information about the world (Rojas & Skura, 2002). **They play an important role in shaping our group's vision of a sustainable UBC food system and guiding us in defining the concept of sustainability and choosing the corresponding indicators.**

Due to different academic backgrounds and life experiences, our group initially had two different value assumptions. Several people claimed they were more eco-centric than other philosophies, as their values were in accordance with “the philosophical premise that the natural world has intrinsic value, beyond its significance as resources for the satisfaction of human needs, want, and desires” (Rojas & Skura, 2002). They argued that human beings were only small part of the whole system of the biosphere and human beings should be respectful of Nature. Moreover, we cannot live if the system dies; thus, if we take care of the system, it will take care of us. These group members put a greater importance on the ecological aspect of sustainability by identifying indicators that focus on assessing the ecological impact of the UBC food system and its role in sustainability.

A few other group members found the philosophy of weak anthropocentrism to be more appropriate in describing the interactions between human beings and the environment. The central belief of weak anthropocentrism is that it is natural for human beings to give themselves more importance than other things in nature, but the well-being of the human species is inextricably linked to the health of the biosphere (Rojas & Skura, 2002).

Under the combined value assumptions of both eco-centrism and weak-anthropocentrism, and considering our specific scenario focuses on UBC customers' perceptions regarding food prices and sustainable food products our group emphasizes the concept of a sustainable food system that integrates ecological, economic and social aspects of sustainability with indicators of equal weight in assessing the sustainability of UBC food system.

GROUP FOUR'S DEFINITION OF SUSTAINABILITY

Before revealing our vision of a sustainable UBC food system, it is important to define sustainability according to our group's value assumptions.

Sustainability is a concept that can be measured in terms of ecological, economic, and social indicators. It is defined as the long term viability and capacity of a system to endure over time; specifically, in terms of a food system, its ability to sustain food production to meet current needs, and achieve human and ecological well-being without compromising the ability of future generations and ecosystems to meet their own needs (Bruntland, 2003). As well, a sustainable UBC food system should be economically viable and should meet the needs of the community for safe, nutritious food while conserving and enhancing the community's natural resources and quality of environment.

GROUP FOUR'S VISION OF A SUSTAINABLE UBC FOOD SYSTEM

In accordance with our definition of sustainability, we have developed a vision of a sustainable UBC food system. A sustainable UBC food system is one that:

Ecologically:

- minimizing inputs such as fertilizers and pesticides
- uses local, seasonal products when available
- minimizes its ecological footprint by utilizing more plant-based foods and relies less on the use of non-renewable resources
- strives to conserve the ecosystem by minimizing environmental damage and pollution
- strives to balance the uses of natural resources

- maximizes pre and post-consumer composting and recycling

Economically:

- hires local community members to work in the food system
- provides safe, nutritious, high quality products at fair and acceptable prices
- incorporates efficient and profitable food service outlets that are able to reinvest capital to further enhance the sustainability of the UBC community

Socially:

- educates community members of their role in sustainable practises
- provides a variety of safe, nutritious, and if available culturally acceptable sustainable food products
- encourages involvement of community members in the UBC food system through involvement with the UBC Farm and other similar programs that contribute to the overall sustainability of the UBC community

SCENARIO 8 PROBLEM DEFINITION

The current perceptions of UBC community members and consumers regarding sustainable food products are currently unknown. In order to proceed with initiatives to change purchasing policies to reflect our vision of a sustainable UBC food system, consumer perception and behaviour with regards to food pricing at UBC must be assessed. This information will help us to gauge current and potential support for purchasing sustainable food products as well as assess the economic, social, and ecological costs and benefits of adopting these practises.

Ultimately, the goal of this scenario is to develop ways to further understand the current and potential customer support for sustainable food products as well as understand customer behaviour with respect to the pricing of sustainable food products.

Before addressing our research agenda, it is important to define what sustainable food products are. Sustainable food products are those that are produced, packaged, advertised, transported, distributed, and disposed of in a manner that reflects our principles of a sustainable food system at UBC.

Ideally, sustainable food products are those that, in terms of,

1) Production

- use minimal inputs (e.g. water)

- maintain soil health
- optimize nutrient recycling
- use integrative pest management and decrease the use of pesticides
- are produced by UBC Farm or local farm markets within the lower mainland
- minimize overall ecological impact

2) Packaging

- use minimal packaging with maximum use of compostable organic materials
- minimizes input costs to maintain competitive food prices
- produces the lowest levels of waste possible by using recyclable materials for packaging or packaging made from recycled materials

3) Advertisement

- uses advertising that incorporates education about sustainability issues and
- promotes plant-based foods and eating lower in the food chain
- advocates the sustainability of the UBC food system and builds a strong industry identity to attract loyal customers
- offers information on ways that community members can get involved with improving sustainability

4) Transportation

- decreases food miles to reduce fossil fuel use and emissions to help preserve the environment
- uses local, fresh foods in order to minimize harvest-to-table time

5) Distribution

- uses a centralized, local distribution center
- distributes local products to campus in an efficient manner that decreases environmental impact
- increases the ease of access to food service outlets by ensuring that food outlets are evenly distributed across campus

6) Disposal

- increases pre and post-consumer recycling and composting
- relies less on non-recyclable products such as Styrofoam
- encourages the use of reusable utensils and containers

See Appendix C for the Food Price Breakdown

INDICATORS OF SUSTAINABILITY WITHIN THE UBC FOOD SYSTEM

Now that we have provided our vision of a sustainable UBC food system, we can outline specific indicators that are important in measuring the contribution of food pricing to its overall

sustainability. Many of these indicators are similar to those outlined in group three's model, but have been modified in order to be applicable to our scenario.

Ecological Indicators

1) The source of food consumed at UBC, measured by food miles

This indicator examines where the food consumed at UBC comes from. It determines the food miles in an effort to determine whether or not it can be considered local. Often, products such as produce are cheaper when imported than if they are grown locally. If the UBC food system was to buy only locally grown produce, the price of food at UBC could potentially increase. This would affect the perceptions of UBC customers regarding the price of purchasing more sustainable food products.

2) Ecological footprint

Food produced in an ecologically sustainable manner that decreases the use of pesticides and other inputs often requires more intensive labour. Thus, food products that are produced in an effort to decrease ecological footprint can potentially be more expensive which will affect consumer perceptions of food prices.

Economic Indicators

1) Profitability of the UBC food system

In order for the UBC food system to maintain function, it must be profitable for the stakeholders involved. When the food system is profitable, capital can be reinvested into the system to further enhance its sustainability. If consumers are paying higher prices for sustainable food products but do not see any benefits of doing so, their perceptions of purchasing these products will be affected.

Social Indicators

1) Consumer acceptability and affordability of sustainable food products

This indicator looks at the willingness to pay as well as the ability to pay for sustainable food products. This is the most important indicator in our scenario. It is important to note that although people might be willing to pay more for sustainable food products, they might not be able to afford sustainable food products.

2) Consumer education and awareness of sustainable food products

Education and awareness are imperative in developing a more sustainable food system. Hopefully, if more people are aware of the benefits of consuming sustainable food products, their perception of buying these products will be more positive and they will be more inclined to purchase them when available.

RESEARCH AGENDA

In order to address the problem definition of scenario eight, the following research agenda was developed and includes ways to:

- 1) Identify the perceptions of UBC customers regarding the price of food
- 2) Examine the economic costs and benefits of adopting more sustainable food purchasing policies. The two policies that we have agreed to expand on are:
 - I. From whom the UBC and AMS food services are purchasing.
 - II. Increasing purchasing accessibility by increasing more acceptable method of payments. (I.e. debit and credit card transactions).
- 3) Establish the ecological, economic, and social costs and benefits of adopting sustainable food practices at UBC. We have included five food practices in analyzing this task:
 - I. Develop a campus wide education program concerning sustainable food products
 - II. Increase the procurement of food produced in an ecologically sound manner
 - III. Increase the use of locally grown food
 - IV. Decrease food packaging
 - V. Increase pre and post-consumer recycling and composting and encourage the use of reusable containers and utensils

MOTIVES FOR RESEARCH

- 1) Economic
 - Increasing profit within the UBC food system
- 2) Social
 - Increasing customer satisfaction; meeting cultural and social needs and wants
 - Increasing community and customer awareness
- 3) Ecological
 - Decreasing ecological impact/footprint on the UBC food system

RESEARCH DESIGNS

The food Systems project at UBC has been a collaborative effort involving action-based research. The students of Agricultural Sciences 450 with the AMS and UBC food services are conducting this research. In order to understand the components of our research agenda, it is necessary to outline the benefits of such research especially since future objectives may be based on our recommendations through this research method.

Why Action Research?

Action research is beneficial in that it allows communication between the people most affected by the results of the research (*e.g.* students.). It promotes feedback between the people making the decision and the concerned communal region. The faculty of Agricultural Sciences takes great pride to have students be an active part of this integrated effort towards a sustainable food system at UBC. We, as students can be more significant in making changes since many of the results obtained from this project will most specifically affect us. It is important to signify that, “change for the sake of change is a meaningless exercise that accomplishes little and often leads to disaster.” (Pearson, 2004). We wish to emphasize that the main vision of this project should be clearly defined. In order for action research to be competent the following criteria, adapted from must be recognized and established:

- Management must maintain and demonstrate commitment
 - UBC, AMS and the people actively involved in this project should be dedicated in implementing the recommendations sought by this project.
- The pace of change should be monitored*
 - It is crucial to determine list of recommendations that must be implemented and by what time. Changes should be introduced casually at a slow pace so that the consumers at UBC are not overwhelmed by it.
- Communication should be continuous
 - There should be a constant feedback loop between members involved keeping all concerned groups posted about what is being actively

implemented, why it is happening, what the group can expect and how it relates to the long term goal.

- Involving respondents in the process
 - Although the feasibility of this may be questionable, this project would be benefited from having involvement from other faculties or students that may be interested. With involving more people in this project, students may have a better hand in being in sync with the objective at hand. As the saying goes, the more, the merrier. More support can be induced for the changes implemented.
- Focus on a few things at a time*
 - “Too many changes at one time are a recipe for disaster.”(Brown, 2004). Focus on smaller factors and work with them annually. Upon completion, set other few smaller objectives that could be applied.

*These criteria will be elaborated upon in our timeline.

Random Sampling

Our research instruments have been designed based on random sampling. This method induces unbiased results, “... [it] is the purest form of probability sampling.” (StatPac, 2004). Random sampling ensures that people have an equal and known chance of being selected. It is especially useful when dealing with large populations since it is often difficult to identify and get feedback from every member of the population involved.

HOW TO STUDY THE COMPONENTS OF OUR RESEARCH AGENDA

Qualitative Methods:

- **Surveys** and **open-ended questionnaires** to identify what UBC customer’s values and to identify perceptions of UBC customer’s with respect to the price of food *i.e., what would they pay more or less for?*
- Full costs and benefits can be measured by **cost benefit analysis** and examining the social impact of the five food practices listed above.

Quantitative Methods:

- Examine the economic costs and benefits of adopting more sustainable food purchasing policies for campus food services by analyzing the two policies listed above and understanding food prices.
- Full costs and benefits can be measured by analyzing costs associated with the five food practices listed above.

1) OPEN-ENDED QUESTIONNAIRES/WRITTEN SURVEYS

Open-ended questionnaires can be useful in determining the true perception of UBC customers regarding price of food. They would have the opportunity to respond to short questions regarding this area. This gives the respondents an opportunity to share valuable information that may interest them or have not been thought of by the researchers themselves. Questionnaire design proceeds in a precise and orderly manner. Questionnaires follow a well-structured procedure outlined in the flow chart located in Appendix A: (adapted from Stat Pac Inc., 2004

See Appendix A for an example of Open-Ended Questionnaires and Appendix B for the Economic Cost and Benefit Analyses

TIMELINE FOR ACTION

The next two Agricultural Sciences classes have many specific tasks to address. Primary research needs to be conducted and the research model needs to be continued according to the steps previously outlined. According to the Agricultural Sciences 450 class UBC Food System Collaborative project, the goals of this project were defined in the overall vision stated for the first AGCS 450 class in 2002. As defined in our Scenario eight specific tasks, we have developed a possible timeline for the next two years. Up to this moment in time we, the 2004 AGSC 450 group 4, have followed the previously defined research agenda model. The

feasibility of these specific tasks must be decided by all stakeholders involved in this project during the next two years. This includes Agricultural Sciences and Food and Nutrition professors, course coordinators, the AMS Food and Beverage Department and UBC Foodservices. We have begun to develop the questionnaires and surveys, such as the ones in our appendices.

This flow chart will continue to be developed in the next two years. The first task for the 2005 AGSC 450 class will be to continue refining the data collection instruments, the questionnaires and surveys, in an effort to increase the clarity and ease of delivery. A second, related task will be to conduct primary research to determine a factual cost and benefit analysis and determine the numerical value of sustainable food products that can be sold on campus. This can be done by examining the actual numerical costs for items discussed in our own paper; such as purchasing local food, decreasing food packaging and expanding alternate waste disposal methods. A commodity chain analysis may also be an excellent tool to use along with cost benefit analysis to determine the appropriate prices for more sustainable food items to be offered on the AMS and UBC foodservices menus.

The task for the 2006 Agricultural Sciences class is to conduct community-based research through focus groups and surveys developed in the previous year. This can be done by conducting focus groups and visioning seminars (Leiblen). In an effort to produce efficient results about the opinion of students in regards to the price of food at UBC research should first be conducted within the agricultural sciences faculty and within the junior residences, Totem and Vanier, where all students are eating meals provided by UBC Foodservices. Information regarding consumer perceptions and awareness of food pricing can then be compiled and finally analyzed. Further sustainable food-purchasing initiatives can be developed based on the findings from this research.

STAKEHOLDERS AND BENEFICIARIES

Encouraging the use of sustainable food production, purchasing and disposal within the UBC food system will have far-reaching effects. Research to determine the plausibility of implementing this type of protocol will be determined through our research of customer perceptions of food prices at UBC. The three main stakeholders who will benefit from this research are: the UBC food outlets, both AMS and UBC operated, the UBC community including permanent on campus residents and faculty as well as non-residents, and local farmers including UBC Farm.

The overall assumption is that food prices will increase if more sustainable food production and purchasing practices are employed. Our research will determine whether or not customers would be willing to pay increased prices for their food given the proposed benefits to the environment. If more sustainable food practices result in higher food prices in general, UBC food service outlets may initially see an immediate decrease in sales resulting in lower profit. It is our feeling however, that as more sustainable practices become the norm and as the demand for them increases, long-term savings will be able to offset short-term losses. Therefore, it is assumed that UBC food outlets will benefit from the research through increased profits in the long term. UBC customers will also benefit from this research. As they come to understand the reasons behind more sustainable food production, they will come to expect food production methods that are more sensitive to the earth and its inhabitants. Local farmers, including those at the UBC farm, who will be encouraged by these proposed ideas to supply much of the food consumed at UBC, can benefit as their products will likely form the basis of the UBC food system.

CONCLUSION

Perhaps the greatest benefit of this research will come from the increased knowledge by all members of the UBC community about the benefits of sustainability in their own lives and

the ways they might incorporate this newfound knowledge outside the boundaries of the UBC food system. We should all strive to enhance sustainability in our personal lives and one way to do this is to be aware of the food we eat and where it is coming from. If we all make an effort to purchase sustainable food products, we will be one step closer to achieving our vision of a sustainable UBC food system.

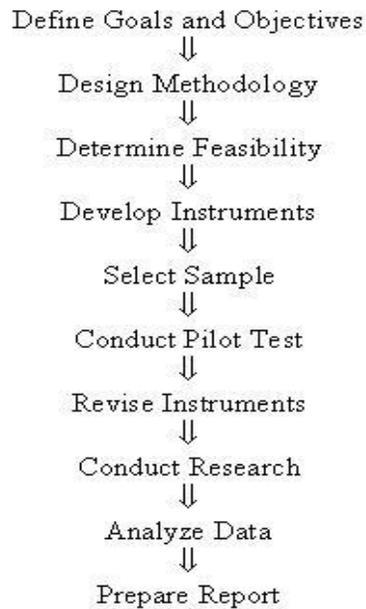
REFERENCES

1. Au, Shumann, et. Al., The Sustainability of UBC Food System Collaborative Project II. Vancouver: Agricultural Science 450, UBC, 2003.
2. Bouris, Kristina. 2003 UBC Food System Collaborative Project: Summary of Findings. Vancouver: Campus Sustainability Office, UBC, 2003.
3. Brighten, Caryn, et. Al., The Sustainability of UBC Food System Collaborative Project II Scenario #8. Vancouver: Agricultural Science 450, UBC, 2003.
4. Brown, Lester R. (2003). Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble. New York, NY: W.W. Norton.
5. Brown, Lester R. (2003, December). Wakeup Call on the Food Front. Eco-Economy Updates. Retrieved January 15, 2004 from the World Wide Web: <http://www.earth-policy.org/Updates/Update31.htm>
6. Cheng, Katherine, et. al. Assessing the Sustainability of the UBC Campus. Vancouver: Agricultural Science 450, UBC, 2003.

7. Feenstra, G.W. 1997. "Local Food Systems and sustainable communities." *American Journal of Alternative Agriculture*. Vol 12(1): pages 28-36.
8. Group Three (2003). The Sustainability of the UBC Food System: Collaborative Project II. UBC, Vancouver.
9. Indicators of Sustainability Training. Retrieved from the World Wide Web March 13, 2004:
<http://www.sustainablemeasures.com/Training/Indicators/Outline.html>
10. Kloppenburg, John, Jr., John Hendrickson and G.W. Stevenson. Coming In To The Food shed. *Agriculture and Human Values* 13:3 (summer): 33-42, 1996
11. Lieblein, G. Francis, C., & Torjusen, H. 2001. "Future interconnections among ecological farmers, processors, marketers, and consumers in Hedmark County, Norway: Creating a Shared Vision". *Human Ecology Review*, Vol.8 No. 1: pages 60-70.
12. Pearson. Action Planning in the Survey Process. Retrieved from the World Wide Web March 1, 2004: <http://www.pearsonncs.com/research-notes/95-02.htm>
13. Pretty, Jules. Policies That Work for Sustainable Agriculture. Regenerating Agriculture, 1995.
14. Rojas, A. & Skura, B. (2002). Agricultural Sciences 250, Land, Food and Community I course material. UBC, Vancouver.
15. University of British Columbia Waste Management "Compost Project". (2003). Retrieved February 19, 2004 from the World Wide Web:
<http://www.recycle.ubc.ca/rwaste/compost.pdf>

APPENDIX A: OPEN-ENDED QUESTIONNAIRE

RESEARCH METHODOLOGY



BENEFITS OF OPEN-ENDED QUESTIONNAIRES

1. Cost effective. The larger the sample size and more the questions the more cost effective they are.
2. Easy to analyze. Data entry and tabulations can be documented in software applications with relative ease.
3. Most people are familiar with them and don't become hesitant about them.
4. They reduce bias. Questions are presented in a uniform manner and are not influenced by the researcher's agenda.
5. They are less intrusive than telephone or face-to-face surveys. They can be mailed, or in our case represented during class time. They can be short in length not taking too much time.

EXAMPLE SUGGESTIVE SURVEY

CIRCLE ONE:

1. Do you find food prices at UBC:
 - a. cheaper than other places
 - b. similar to other places
 - c. more expensive than other places.
2. What foods would you be willing to pay more for?
 - a. Organic

	COST	BENEFITS
BUYING FROM LOCAL FARMER	<ul style="list-style-type: none"> ▪ Limited variety ▪ Limited quantity may not meet demand of UBC's market ▪ Would have to deal with numerous farmers to meet demand and increase food variety. 	<ul style="list-style-type: none"> ▪ Decrease transportation mileage and related costs ▪ Recycles money back into local economy
BUYING FROM DISTRIBUTOR	<ul style="list-style-type: none"> ▪ May not economically benefit local market ▪ Increased food mileage ▪ Food production practices and sources may be unknown. 	<ul style="list-style-type: none"> ▪ Increased food quantity may keep food prices low. ▪ Increased food variety. ▪ One could provide many food products therefore, less time consuming, less paper work, less human intervention.

2) Increasing purchasing accessibility by increasing more acceptable methods of payments. (i.e. debit and credit card transactions).

	COST (to customers or food services)	BENEFITS
Using an AMS Food card	<ul style="list-style-type: none"> ▪ Market students in residence or those that spend ample time at UBC only. ▪ Can only be used at UBC ▪ Cost of producing and distributing meal cards 	<ul style="list-style-type: none"> ▪ Provides additional discounts per transactions ▪ Decreases paper work ▪ Safer than cash payments due to theft etc. ▪ Easy to use for residence who purchase exceedingly at UBC. ▪ Provide a method of budgeting eating expenses for students
Using Cash	<ul style="list-style-type: none"> ▪ Limited customers ▪ Customers may comply on using ATM machine to obtain cash to purchase food paying an ATM fee. 	<ul style="list-style-type: none"> ▪ Limited paper work ▪ Limited fees for financial institutions.
Using a Debit/Credit card	<ul style="list-style-type: none"> ▪ Incurred financial institution costs may apply. ▪ Increase paper work 	<ul style="list-style-type: none"> ▪ Increase customer accessibility by increasing method of payments ▪ Increase profit by increasing accessibility

II) ANALYZING SOCIAL, ECONOMIC AND ECOLOGICAL COSTS AND BENEFITS OF ADOPTING SUSTAINABLE FOOD PRACTICES:

	COST			BENEFITS		
	Social	Economic	Ecological	Social	Economic	Ecological
Locally Grown Foods	Less Food variety	Higher cost of food Less profit for	N/A	Enhanced community ties	Money reinvested in local economy	Less pollution due to less transportation. Less food mileage

		producers				
Ecologically Sound Foods	Increased costs due to higher labour needs Limits variety and quantity	More expensive for farmers to grow thus less profit	No pesticide preservative use May have limited shelf life	Higher contribution to sustainability	Higher contribution to local economy	Less environmental degradation Less pesticide use and consumption in the food chain
Disposal Methods	Require more effort on part of consumer to recycle and compost	Maintaining and providing composts, recycling bins.	N/A	Less landfills.	Less invested in garbage bins, bags and disposal.	Garbage will shrink. Increase nutrients in soil. Less landfills, more parks!!
Decreasing Food Packaging	Will have to bring own utensils etc.	Provide more re-usable utensils and plates.	N/A	More of a home feeling	Less ongoing cost just one time cost of cutlery and plates. Food prices can decrease due to less packaging cost	Less destruction on ozone and less garbage.
Campus Wide Education Program.	Time and effort must be invested into education	Money must be invested into education program	N/A	Education and awareness promote improvements in sustainability	Increases in sustainability helps stimulate local rather than foreign economies	More education will result in a decreased ecological footprint

APPENDIX C NEXT PAGE

APPENDIX C: WHAT A FOOD DOLLAR BUYS



